
प्रिंटिंग उद्योग के लिए कागज नुकसान और अपव्यय के लिए गाइड

भाग 1 शीटफेड छापा और ऑफसेट प्रक्रियाएँ
(पहला पुनरीक्षण)

**Guide for Paper Spoilage and
Wastage for Printing Industry**
Part 1 Sheetfed Letterpress and Offset Processes
(*First Revision*)

ICS 37.100.10

© BIS 2016



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली-110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.org.in www.standardsbis.in

FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Publication and Graphic Technology Sectional Committee had been approved by the Management and Systems Division Council.

This standard (Part 1) was first published in 1987. The revision of this standard has been undertaken to align it with the latest developments in the printing technology.

In printing, binding and other operations, some extra paper should be added to the base quantity of printable papers and boards to allow for make-ready, spoilage for subsequent printing and other finishing operations etc. The quantity will depend upon the number of colours, workings, quality of job, length of run, etc and it should include additional allowance for operations like ruling, numbering, perforating, die-stamping, overprinting, punching, foil printing, varnishing, lamination, graining, UV spot coating, etc.

Besides the above, paper gets damaged due to handling during the course of transit from the suppliers to the printers as also during storage. Therefore for proper packaging of paper and board reference may be made to IS 6211 : 1993 ‘Code of practice for packaging of paper and board’.

It is necessary to have standard norms for arriving at the admissible spoilage and wastage that has to be allowed for various printing and production jobs which may be based on understanding between the print buyers and print sellers (printers). Thus standard is published in two Parts. The other part in this series is:

Part 2 Web offset processes.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GUIDE FOR PAPER SPOILAGE AND WASTAGE FOR PRINTING INDUSTRY

PART 1 SHEETFED, LETTERPRESS AND OFFSET PROCESSES

(First Revision)

1 SCOPE

1.1 This standard (Part 1) prescribes the minimum overs that should be added to the base (printable) quantity of paper needed for a particular job to be printed by sheetfed letterpress and offset processes.

1.2 This wastage formula should not be applied to paper below 48 gsm including tissue paper, specialty paper and air mail paper since additional wastage is justified for printing on these papers. Wastage formula for such papers could be mutually decided between the printer and the print buyer.

2 TERMINOLOGY

2.1 Spoilage/Wastage — Extra quantity of paper required, over and above the actual quantity to be printed.

2.2 Make-ready — Process of setting up a printing machine for proper positioning of the printing image on paper to print, uniform impression, colours registration and substance of paper to be used etc, prior to actual run of the job.

2.3 Fixed Wastage — The wastage of sheets of paper involved in make-ready process prior to actual running of the job.

2.4 Running Wastage — The wastage of sheets of paper which occurs during continuous printing of the job subsequent to make-ready.

2.5 Base Quantity — The quantity of paper required for executing the job excluding the wastage.

2.6 Working Sheet — Working sheet is the actual size and substance of the paper being used for printing a job on the machine.

2.7 Common Work — Work of average quality normally printed.

2.8 Quality Work — Work of high quality, which requires accurate registration, sharpness and high colour consistency throughout the print run.

3 RATIONALE FOR COMPUTING PAPER SPOILAGE ALLOWANCE

3.1 The rationale in adopting the formulae for paper

spoilage envisages the following:

- a) A fixed number of sheets (if irreducible, minimum number) are required at initial stages for make-ready operations regardless of the quantity to be printed;
- b) Paper spoilage depends on the extent and nature of work;
- c) Wastage of sheet occurs during running/manufacturing process on account of some defects/deficiencies/adjustments of impressions, paper stock or material;
- d) The spoilage allowance shall be computed on the basis of some fixed percentage per colour of actual print run but also with some minimum number of sheets, irrespective of the print order, keeping in view the Fixed Wastage for make-ready etc;
- e) Spoilage for every additional operation like ruling, numbering, perforating, die-stamping, punching, foil printing, varnishing, lamination, graining, UV coating etc, shall also be provided;
- f) Wherever machine proofs are required, additional wastage on the basis of minimum make-ready shall be provided;
- g) Spoilage allowance shall be computed on base quantity of paper; and
- h) Spoilage allowance shall be different for computerized and non-computerized printing machines.

3.1.1 Allowable wastage for sheetfed letterpress process and offset process has been explained in 4.

4 ALLOWABLE WASTAGE—SHEETFED LETTERPRESS/OFFSET PROCESS

4.1 Sheetfed Letterpress Process

4.1.1 For common work sheetfed letterpress process allowable wastage to be added to the base quantity of paper shall be 1 percent per colour subject to a minimum of total 25 sheets for upto 2 colour jobs and total of 50 sheets for 3 and 4 colour jobs.

IS 12000 (Part 1) : 2016

4.1.2 The above wastage is expected to cover the wastage for normal binding operations like folding, gathering, collating, stitching/sewing/pasting, trimming, etc, and hence no additional wastage need be given for these operations. However additional wastage for cutwork and other special operations like ruling, perforating, numbering, die stamping, foil printing, punching, varnishing, laminations, graining, UV/Spot Coating, special category jobs, etc, may be settled between the print buyer and the printer.

4.2 Sheetfed Offset Process

4.2.1 For Sheetfed Offset Process allowable wastage to be added to the base quantity of paper shall be 1 percent per colour subject to a minimum of total 40 sheets for jobs upto 2 colours and total 100 sheets for 3 and 4 colour jobs.

4.2.2 The above wastage is expected to cover the wastage for normal binding operations like folding, gathering, collating, stitching/sewing/pasting, trimming, etc, and hence no additional wastage need be given for these operations. However additional wastage for cutwork and other special operations like ruling, perforating, numbering, die stamping, foil printing, punching, varnishing, laminations, graining, UV/Spot Coating, special category jobs involving more than 4 colour printing, etc, may be settled between the print buyer and the printer.

4.2.3 In case of computerized printing machines, wastage may be settled between print buyers and printer; however, it shall in no case exceed the wastage specified in **4.2.1**.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: MSD 06 (0386).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 2323 0131, 2323 3375, 2323 9402 Website: www.bis.org.in

Regional Offices:

		<i>Telephones</i>
Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	{ 260 3843 260 9285
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

Branches: AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN.
FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KOCHI. LUCKNOW.
NAGPUR. PARWANOO. PATNA. PUNE. RAJKOT. VISAKHAPATNAM.